

REMARKS/ARGUMENTS

After the foregoing Amendment, claims 1-20 are currently pending in this application. Claims 1, 4, 11, 13, and 20 have been amended to more distinctly claim subject matter which the Applicants regard as the invention. In the specification, a new title has been provided, as suggested by the Examiner. Applicants submit that no new matter has been introduced into the application by these amendments.

Election/Restrictions

The Examiner asserts that Applicant's argument—that a restriction requirement is improper because claims linking the groups together were provided in the response—fails because the linking claims were not present at the time of the restriction. The Examiner also asserts the restriction is still deemed proper, and the restriction was made final. The Examiner further notes that the restriction requirement between the linked groups is subject to the nonallowance of the linking claims 17-20. If the linking claims are allowed, the restriction requirement as to the linked groups shall be withdrawn and the groups rejoined and examined.

Objections to the Specification

The Examiner objected to the title as allegedly not being descriptive. A new title has been provided to overcome the objection. Withdrawal of the objection to the specification is respectfully requested.

Claim Rejections - 35 USC § 112

Claims 18 and 19 stand rejected under 35 USC § 112 second paragraph as allegedly being indefinite, because they contain the term “substantially.” The Examiner contends that this is a relative term and there is no standard that allows one of ordinary skill in the art to ascertain the scope of the invention. Applicants respectfully traverse this rejection.

The term “substantially” is not a relative term. Rather, it is a term having a well understood, generally applicable meaning that is easily understood when applied to a single object. A “relative” term implies a comparison or other relationship of one object with another, such as “bigger,” “smaller,” “faster,” etc. In contrast, “substantially” has a readily ascertainable meaning when used with regard to a single object, and does not imply a relationship. One common meaning of “substantially” is “without material qualifications.” (see <http://en.wiktionary.org/wiki/substantially>, viewed on 1/15/07). It is in this sense that the term “substantially” is used in claims 18 and 19. It means simply that there is no material qualification to the associated claim elements, i.e., the claims encompass the addition of non-material, insubstantial misdirection or time gaps, respectively. If the modifier “substantially” could not be used in claims 18 or 19, one might attempt to work around the claims simply by including a mechanism that introduces an insubstantial but non-zero misdirection or delay in the data path or timing. Such a workaround to a claim should not be endorsed by the PTO, and the use of the term “substantial” in the claims is proper.

As to claim 18, the Examiner alleges it is unclear how data can be held and still be delivered as soon as possible. However, claim 18 does not recite that data words being held are delivered as soon as possible. Rather, claim 18 recites holding at least one of the data words of a data packet in storage until “additional” data words of the data packet are received, and

delivering the stored words to the data output as the “*additional*” words are delivered substantially directly from the data input to the data output as soon as possible after these “*additional*” words are received at the input (i.e., without being stored). The data words that are stored are not the data words that are being delivered as soon as possible.

Based on the arguments presented above, withdrawal of the 35 USC § 112 rejection of claims 18 and 19 is respectfully requested.

Claim Rejections - 35 USC § 102

Claims 1-4 and 17 stand rejected under 35 USC § 102(a) as being allegedly anticipated by U.S. Patent Application Publication 2003/0159008 to *Sprangle* et al. (hereinafter “*Sprangle*”). Applicants respectfully traverse this rejection.

The claims recite methods and apparatus for delivering data from a data input to a data output within a data processing system, and include selecting a system performance parameter to be optimized, receiving at the data input a sequence of discrete data words in transit to the data output from any source, determining an optimum mode of delivery of the data words to the data output so as to optimize the selected performance parameter, and delivering the data words to the data output in the determined optimum mode. The optimum mode of delivery may include at least one of an optimum time and sequence of delivery of the data words. The data may be delivered so as to minimize latency, maximize bandwidth, or maximize safety. The data words may be delivered according to a preselected sequence.

It is well settled that a reference must teach every element or aspect of a claim in order to anticipate the claim under 35 USC § 102(a). *Sprangle*, however, does not do so.

Sprangle discloses a method and apparatus for controlling access to memory, comprising monitoring memory access requests from a hardware prefetcher and an out-of-order processor core, determining whether the memory accesses from the hardware prefetcher are used by the out-of-order core, and switching memory accesses from a first mode to a second mode depending on the percentage of memory accesses generated by the hardware prefetcher that are actually used by the out-of-order core.

The memory access mode changes in *Sprangle* affect only the fetching of data from memory for use by an out-of-order processor core, and do not affect the delivery of data from an input to an output, such as data being delivered to the processor, while the data is in transit from the input to the output. *Sprangle* does not teach or suggest modifying the delivery of the fetched data to the processor, and presumably, after the data is fetched from memory in *Sprangle*, it is delivered directly to the processor. In contrast, the mode changes of the claimed invention affect the delivery of data, such as to a processor, while the data is in transit, but have nothing to do with fetching data from memory. Indeed, in the claimed invention the data need not even be received from memory, but can be received from any source.

The Examiner asserts that *Sprangle* teaches receiving at a data input a sequence of discrete data words, determining an optimum mode of delivery of the data words to the data output, and delivering the data words from the data input to the data output in the determined optimum mode. This is incorrect. As noted above, *Sprangle* discloses fetching data in a determined memory access mode, but does not disclose delivering data in a determined data delivery mode.

Furthermore, even if *Sprangle* did disclose delivering data in a determined data delivery mode, *Sprangle* does not disclose receiving data from any source. Instead, in *Sprangle* the data is always fetched from a memory, such as a DRAM.

Based on the arguments presented above, it can be seen that *Sprangle* does not teach all of the elements of claims 1 and 4. Because *Sprangle* does not teach all of the elements of claims 1 and 4, *Sprangle* cannot anticipate those claims under 35 USC § 102(a), and claims 1 and 4 are allowable over *Sprangle*. Claims 2, 3, and 17-20 depend from claim 1. Therefore, without prejudice to their individual merits, those claims are also allowable.

Based on the arguments presented above, withdrawal of the 35 USC § 102(a) rejection of claims 1-4 and 17 is respectfully requested.

Claims 11-14 stand rejected under 35 USC § 102(e) as being allegedly anticipated by U.S. Patent Application Publication 2004/0090924 to *Giaimo* et al. (hereinafter "*Giaimo*"). Applicants respectfully traverse this rejection.

Giaimo is directed to wireless routing using a plurality of wireless channels. A wireless network is implemented in which different channels are used for conveying different types of data using wireless devices of different capabilities. A device on the network, such as a computer, can comprise more than one wireless device, such as a radio, and each radio in the computer can operate on a different channel. Each channel for which the computer has a radio can support a different mode. Each radio can be selectively operated so that the computer can use it to operate in either an infrastructure mode in conjunction with an access point (AP), or in an ad hoc mode to communicate directly with a peer. The radios and modes are automatically selected in response to the type of data being communicated. For example, a computer can operate on one channel in infrastructure mode (in communication with an AP, such as to receive

web pages), and simultaneously operate on another channel in ad hoc mode (in communication with a peer, such as to receive streaming media). Radios in different computers can be selectively operated as to the channels and modes they use based on their capabilities. For example, high-performance devices can use a first channel, e.g., high-speed low-latency wireless devices such as IEEE 802.11g compliant radios, and lower performance devices can use a second channel, such as IEEE 802.11b compliant radios. The performance of the high-performance device channel is not compromised by having to accommodate communications from the lower-performance wireless devices. Thereby, communication bandwidth and quality of service (QoS) can be improved.

Claim 11 recites a method of delivering data from a data input to a data output in a data processing system using a plurality of multiplexed data channels. Multiplexed channels use the same equipment, (here, data input and data output) to carry multiple communications. In contrast, *Giaimo* teaches selecting independent channels in a wireless network, wherein each channel uses different communications devices. In particular, *Giaimo* is directed to segregating wireless devices of the same general bandwidth requirements and payload types on independent wireless channels using different communications devices. *Giaimo's* approach is incompatible with multiplexed channels using the same devices for different channels, as in claim 11.

Claim 13 recites a method of delivering data from a plurality of data sources from a data input to a data output within a data processing system. The method comprises selecting a system performance parameter to be optimized for each source; receiving at the data input a sequence of discrete data words in transit to the data output from each source; determining an optimum mode of delivery of the data words to the data output so as to optimize the selected performance parameter for the associated source; and delivering the data words from the data input to the data

output in the determined optimum mode for each source. In contrast, *Giaimo* does not operate in a data processing system, but is applicable to a wireless network. In addition, *Giaimo* does not select a system performance parameter to be optimized for each source. Instead, *Giaimo* simply segregates wireless devices of the same general bandwidth requirements and payload types onto independent wireless channels. Then, *Giaimo* uses separate communication channels for data sources having those different bandwidth requirements and payload types. After the data sources are segregated, they do not communicate with each other or use the same communications devices (e.g., 802.11b devices communicate with other 802.11b devices, whereas 802.11g devices communicate with other 802.11g devices). In contrast, in claim 13, data words are delivered from a single data input to a single data output in a determined optimum mode for each source. There is no teaching or suggestion in *Giaimo* wherein data from a plurality of data sources are delivered from a single data input to a single data output in a determined optimum mode for each source.

Thus, it can be seen that *Giaimo* does not teach all of the elements of claims 11 and 13, therefore claims 11 and 13 are allowable over *Giaimo*. Claim 12 depends from claim 11, and claim 14 depends from claim 13. Therefore, without prejudice to their own individual merits, claims 12 and 14 are also allowable.

Furthermore, as noted, *Giaimo* is directed to wireless communications in a wireless network. *Giaimo* does not teach or suggest delivering data in a data processing system, as do claims 11 and 13.

Based on the arguments presented above, withdrawal of the 35 USC § 102(e) rejection of claims 11-14 is respectfully requested.

Claim Rejections - 35 USC § 103(a)

Claims 18 and 19 are rejected under 35 USC § 103(a) as being allegedly unpatentable over *Sprangle* (same as above) in view of U.S. Patent 6,912,598 to *Bedarida*, et al. (hereinafter “*Bedarida*”). Claim 20 is rejected under 35 USC § 103(a) as being allegedly unpatentable over *Sprangle* (same as above) in view of U.S. Patent Application Publication 2002/0018395 to *McLaury* (hereinafter “*McLaury*”). Applicants respectfully traverse these rejections.

To establish a *prima facie* case for obviousness under 35 USC § 103(a), it must be shown that the asserted references, when read alone or in combination, teach all of the elements of the examined claims. In addition, a motivation to combine the references must be shown if more than one reference is being asserted.

Furthermore, the factual inquiries set forth in *Graham v. John Deere*, 383 U.S. 1 (1966), are applied for establishing a background for determining obviousness under 35 USC § 103(a). Those inquiries are: determining the scope and contents of the prior art; ascertaining the differences between the prior art and the claims at issue; resolving the level of ordinary skill in the pertinent art; and considering objective evidence present in the application indicating obviousness or non-obviousness.

Bedarida teaches a non-volatile memory able to simultaneously modify the memory contents and operate in burst mode. The memory comprises two independent memory banks, and control circuitry that controls each memory bank independent of the other, such that the contents of one bank can be modified while the other bank is operated in burst mode.

The Examiner asserts that *Bedarida* teaches, in its Background Of The Invention section, essentially all of the elements of claims 18 and 19 (i.e., the elements not included in independent claim 1, from which claims 18 and 19 depend). However, none of the memory types discussed

in *Bedarida*, at the cited locations or elsewhere, disclose or suggest that data be stored while in transit from the data input to the data output, as does amended claim 1 from which claims 18 and 19 depend. Because *Bedarida* does not teach all of the elements of claims 18 and 19, these claims are allowable over *Bedarida*.

McLaury is directed to a multiple latency SDRAM. However, *McLaury* does not disclose or suggest a data storage element intermediate a data input and a data output for storing individual data words in transit from the data input to the data output for a determined time before delivery to the data output, as does claim 20. Because *McLaury* does not teach all of the elements of claim 20, claim 20 is allowable over *McLaury*.

Furthermore, claims 18-20 depend from claim 1, and include all of the limitations of claim 1. All of the 35 USC § 103(a) rejections depend upon the rejection of claim 1 under 35 USC § 102(a). As discussed above with respect to the 35 USC § 102(a) rejection of claim 1, *Sprangle* does not teach all of the elements of claim 1. Because *Sprangle* does not teach all of the elements of claim 1, claim 1 is allowable over *Sprangle*. Claims 18-20 depend from claim 1. Therefore, without prejudice to their individual merits, these claims are also allowable.

In addition, there is no teaching or suggestion in any of *Sprangle*, *Giaimo* or *McLaury* that their elements be combined. Applicants respectfully submit it is only with impermissible hindsight that the Examiner has combined their elements. Also, *Giaimo* is directed to wireless communications in a wireless network, a field unrelated to the present claims. Therefore, Applicants respectfully submit that one of skill in the art of data delivery in a data processing system would not look to *Giaimo* for elements to use.

Based on the arguments presented above, withdrawal of the 35 USC § 103(a) rejection of claims 18-20 is respectfully requested.

Conclusion


In view of the foregoing amendment and remarks, Applicants respectfully submit that the present application, including claims 1-20, is in condition for allowance and a notice of allowance is respectfully requested.

If the Examiner believes that any additional minor formal matters need to be addressed in order to place this application in condition for allowance, or that a telephone interview will help to materially advance the prosecution of this application, the Examiner is invited to contact the undersigned by telephone at the Examiner's convenience.

Respectfully submitted,

RICHARD W. ADKISSON, *et al.*

BY:


GREGORY J. LAVORGNA
Registration No. 30,469
DRINKER BIDDLE & REATH LLP
One Logan Square
18th and Cherry Streets
Philadelphia, PA 19103-6996
Tel: (215) 9880-3309
Fax: (215) 988-2757
Attorney for Applicant